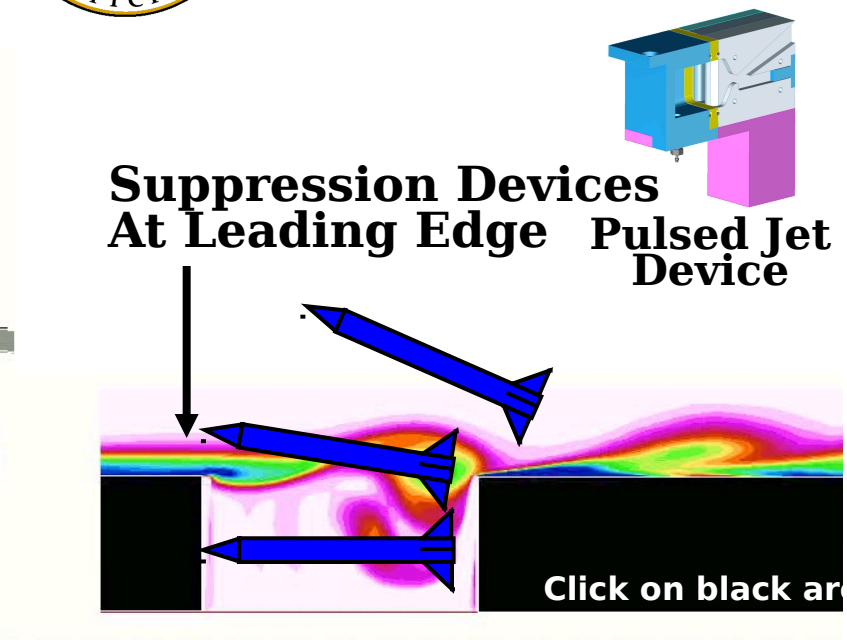
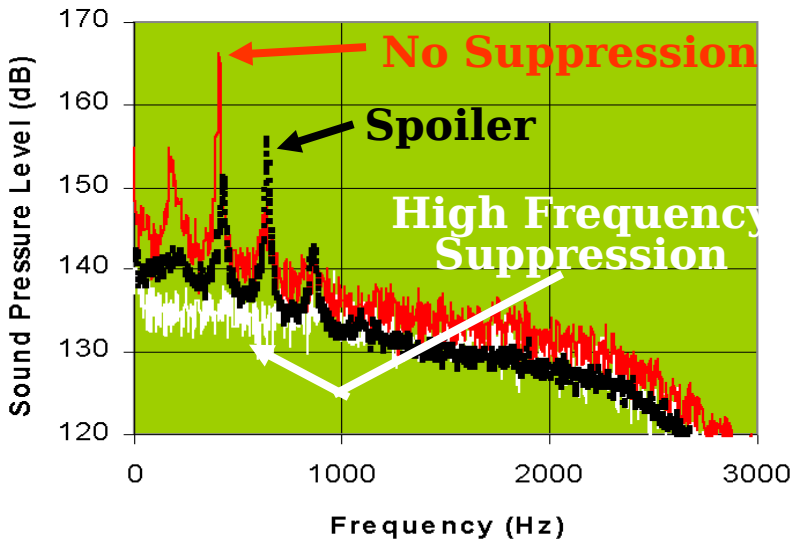
Active Control Of Cavity Aerodynamics

Aerospace Systems Group / Fixed Wing Systems Aerodynamics





Objective: Develop effective, robust, low cost acoustic suppression technology for transonic weapon bays

Payoff: Elimination of aircraft and weapon fatigue issues in weapon bays. Enable Mach > 1 release of "sensitive" weapons.

Participants

DSTL AFRL

Photos depict unsuppressed cavity flow field effects, location of suppression devices, typical pulsed jet device, and effectiveness of high-frequency devices in suppressing acoustic energy.

The large-scale flow disturbances illustrated are eliminated when the pulsed jet is activated resulting in an order of magnitude reduction in destructive acoustic noise

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